AMERICAN ACADEMY *of* ACTUARIES

Terrorism Insurance Implementation (C) Working Group National Association of Insurance Commissioners

Public Hearing on "Terrorism Insurance Matters"

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March 29, 2006

[1] The American Academy of Actuaries is a national organization formed in 1965 to bring together, in a single entity, actuaries of all specializations within the United States. A major purpose of the Academy is to act as a public information organization for the profession. Academy committees, task forces and work groups regularly prepare testimony and provide information to Congress and senior federal policy-makers, comment on proposed federal and state regulations, and work closely with the National Association of Insurance Commissioners and state officials on issues related to insurance, pensions and other forms of risk financing. The Academy establishes qualification standards for the actuarial profession in the United States and supports two independent boards. The Actuarial Standards Board promulgates standards of practice for the profession, and the Actuarial Board for Counseling and Discipline helps to ensure high standards of professional conduct are met. The Academy also supports the Joint Committee for the Code of Professional Conduct, which develops standards of conduct for the U.S. actuarial profession.

AAA Terrorism Risk Insurance Subgroup presentation to
NAIC Public Hearing on Terrorism Insurance Matters
New York City, March 29, 2006

Good morning. I'm Michael McCarter, chair of the American Academy of Actuaries Terrorism Risk Insurance Subgroup. Thank you for the opportunity to speak to you today on some of the important issues affecting the long-term ability of the insurance market to provide terrorism insurance.

I have been designated by the Academy Subgroup to present this statement. This statement was prepared by the Terrorism Risk Insurance Subgroup of the American Academy of Actuaries and represents the consensus views of the Academy Subgroup.

The Academy Subgroup I represent was formed last year to study terrorism insurance issues in response to a request for assistance from Congressional staff who were considering extensions to or replacements for the original Terrorism Risk Insurance Act of 2002, or TRIA. On December 2, 2005, we released a public statement on extending or replacing TRIA, and we are now working to provide Academy input to the President's Working Group on Financial Markets.

Today I want to discuss three things: (1) the potential size of insured losses that could be caused by terrorists, (2) the types of events that could cause such losses, and (3) considerations that could affect the willingness or ability of insurers to provide coverage that responds to such events.

First, how big could insured losses caused by terrorists possibly be? Well, to give you a meaningful answer to that question, I need to discuss my second topic at the same time, because the potential size of the event depends on both the type of terrorist event and the location of that event. I will first discuss terrorist attacks using more conventional explosive devices before taking up the topic of terrorist attacks using weapons of mass destruction.

I should note that the Academy Subgroup's work on this issue benefited greatly from participation by representatives of AIR Worldwide, one of the premiere catastrophe risk-modeling firms. The Academy Subgroup also reviewed a number of other publicly available estimates of the potential size of losses caused by terrorists as a reasonableness check.

For a conventional attack we considered truck bombs such as those used by terrorists in Oklahoma City, the first World Trade Center attack, Beirut, and the Khobar Towers in Saudi Arabia. Weapons of this size can destroy large engineered buildings and cause severe casualties among the buildings' occupants as well as among pedestrians and the occupants of nearby buildings. A city with a high density of exposures will experience much higher losses than will a more geographically spread-out city experiencing an attack from the same type and size of weapon.

To give an idea of the range of possibilities, we looked at the potential property and casualty and group life insurance losses from delivery-truck-size bomb attacks in four cities. The modeled losses were as follows:

New York City: $11.8 billion

Washington, DC: $5.5 billion

San Francisco: $8.8 billion

Des Moines: $3.0 billion

Individual losses of these magnitudes would likely be largely borne by the insurance industry without significant recoveries from the extended version of TRIA, because much of the loss would fall under TRIA's individual insurer deductibles. Unfortunately, it is possible for terrorists to perform more than one of these attacks, multiplying the potential impact on insured losses. As demonstrated on September 11, 2001, it is also possible for terrorists to cause losses significantly larger than the ones we modeled, even without using weapons of mass destruction.

The best available intelligence indicates that terrorists continue to be interested in acquiring and using weapons of mass destruction. The President's Working Group uses the acronym CNBR to stand for Chemical, Nuclear, Biological, and Radiological events caused by terrorism.

CNBR weapons have the potential to cause widespread casualties and to contaminate property over very large areas including whole cities. These weapons can be designed to cause large numbers of fatalities, inflict maximum terror, and damage the economy. Residual effects would likely make rehabilitation of property impossible without very extensive and costly cleanup. As an example, after anthrax was sent through the U.S. mail in 2001, the cost of cleaning up the postal facilities exceeded the structural value of those facilities.

The Academy Subgroup looked at two different CNBR scenarios, medium and large, in the same four cities. In both cases, the selected CNBR agent is assumed to be dispersed through the air during clear, calm weather conditions, and to be targeted to affect large numbers of buildings and their occupants. The events are assumed to occur during normal working hours. The medium CNBR scenario has higher lethality near the CNBR event's source, but the CNBR agent spreads over a smaller area than it does in the large CNBR scenario. The modeled losses were as follows, again for property and casualty and group life insurance:

New York City: Medium - $446.5 billion, Large - $778.1 billion

Washington, DC: Medium - $106.2 billion, Large - $196.8 billion

San Francisco: Medium - $92.2 billion, Large - $171.2 billion

Des Moines: Medium - $27.3 billion, Large - $42.3 billion

In summary, a large CNBR event in any of our largest cities could cause insured losses of $170 billion or more. The largest CNBR event we modeled caused $696 billion in property and casualty losses and $82 billion in group life insurance losses.

Unfortunately, it is possible that terrorists could cause conventional or CNBR losses even larger than any we have modeled.

Now that we've discussed the potential sizes of losses and types of events that could be caused by terrorists, I will focus on some of the considerations that could affect the willingness or ability of insurers to provide coverage that responds to such events.

We need to put the potential size of losses into an insurance financial context. The Insurance Information Institute reports that policyholder's surplus for the entire property and casualty industry was $414.3 billion as of September 30, 2005. This is the most current figure available. Our largest modeled CNBR P&C loss is more than two-thirds higher than the entire property and casualty insurance industry surplus on a pre-tax basis.

There are several issues with this terrorist loss to industry surplus comparison that I need to mention.

First, the insurance industry as a whole does not pay claims: individual insurance companies do. This means that not all of the insurance industry's capital is available to pay any particular loss. Only the capital of insurers providing coverage triggered by a particular event is relevant. In the case of our largest modeled CNBR event, over 90 percent of the estimated P&C losses were in commercial lines. In this scenario, in the absence of TRIA or some other national framework for dealing with terrorism insurance losses, many commercial lines insurers would be devastated.

Second, these loss estimates are on a primary basis before considering any reinsurance coverage that may be available. However, after 9/11, most reinsurance contracts that did not already exclude terrorism coverage were amended to exclude it. The best information we have seen, that provided by the Reinsurance Association of America, is that by 2007 perhaps $9 billion of reinsurance coverage for terrorist events may be available to the entire P&C industry, and much of that reinsurance excludes coverage for CNBR events. This amount of reinsurance coverage is not enough to deal with the massive potential insurance losses that could be caused by terrorist events.

Third, we need to briefly discuss federal income tax effects. On a simple-minded basis, we could calculate the tax benefit associated with the P&C losses in our largest scenario at 35% of $696 billion, or $244 billion. Even on that simple-minded basis the after-tax cost of the P&C losses in that scenario would be $452 billion, which exceeds by nearly $40 billion the P&C insurance industry's entire surplus of $414 billion.

The reality is that the actual tax benefits realized by the P&C insurance industry in this scenario would not even begin to approach the calculated $244 billion. Tax benefits only serve to reduce taxes insurers have paid or otherwise would pay on income. Tax loss carry-backs are limited to two years. The entire P&C insurance industry paid about $15 billion of taxes in 2004, according to the I.I.I. At that rate, even making the overly generous assumption that all taxes had been paid by insurers with terrorism losses, only about $45 billion of the $244 billion calculated tax benefit would be available for collection from the Internal Revenue Service from the taxes otherwise owed for the current and most recent two prior tax years.

Tax loss carryforwards are available for a much longer period, but can only be used to reduce future taxes based on future taxable income of the insurer who generated them. In the absence of TRIA or some other national framework for dealing with terrorism insurance losses, in our scenario many of the insurers with potential tax loss carryforwards would be insolvent and unable to generate future taxable income, so the tax loss carryforwards would expire as worthless.

The Academy Subgroup's two main conclusions in its December 2005 statement were as follows:

1. Because of the potential for terrorist attacks that could cause very large losses, the Subgroup does not believe there is any strategy that can develop sufficient terrorism insurance capacity without some form of legislation that limits insurer liability should these events occur.

2. There should be a mechanism to develop recommendations for a permanent way of dealing with the risk of terrorism.

The President's Working Group is not charged with developing such recommendations, but only with performing an analysis regarding the long-term availability and affordability of insurance for terrorism risk. It is possible that their analysis could lead to establishment of the sort of mechanism we have recommended, and we are committed to providing the President's Working Group with the best quality information available on this issue.

In addition to the financial considerations I have just discussed, there are other considerations that could affect the willingness or ability of insurers to provide their customers insurance coverage that responds to terrorist events.

It is particularly important to note that the modeling of terrorist events presented here relates primarily to the potential size or severity of these events. Though there has been research and development of terrorism models since the September 11, 2001 attacks, quantification of consumer and insurer terrorism exposure is still extremely difficult. Unlike models used to assess natural catastrophe risk, terrorism models cannot rely on past statistical records and the application of meteorological or geological science. Instead, they must rely on the intellectual capital of experts who have studied terrorist groups to develop anticipated frequency and severity assumptions. Even though engineering sciences have built a large body of data relating to building damage and peril intensity, the probabilities associated with the occurrence of a terrorist attack remain somewhat speculative, subject to judgment calls, and a key source of uncertainty.

For example, in evaluating tornado risk, we have an historical database consisting of thousands of observations of tornados, and we have a similar database with hundreds of hurricane observations. However, for catastrophic insured multi-billion dollar terrorism losses in the United States, which TRIA was designed to address, we have only one event.

Compounding the difficulty of this problem is the fact that terrorists can adjust their strategies to increase their chances of success against the efforts being made to mitigate terrorist-caused losses. Hurricane or other natural disaster frequencies may

change over time, but they do not change to deliberately avoid our efforts to mitigate the damage they may cause.

These modeling uncertainties and the risks associated with them help to make raising capital to be committed to terrorism insurance capacity much more difficult than raising capital for natural disaster insurance capacity. For example, substantial reinsurance capital has been raised to replenish the natural disaster reinsurance capacity lost to Hurricane Katrina, but little (if any) of that new capital has been identified as dedicated to providing terrorism reinsurance.

There are other important issues that, given the NAIC working group's full schedule today, I do not have time to address. Here are some of the additional topics that need to be considered:

- The inability of workers compensation insurers to control accumulations of terrorism exposure except by avoiding writing the underlying risk. Group life insurers face a very similar situation.

- The degree that terrorism risk mitigation efforts can or should be encouraged via the insurance mechanism.

- Whether competitive marketplaces, unaided by any outside intervention, will produce a satisfactory terrorism insurance market.

- What sort of mechanisms can maximize the influence of competitive markets on terrorism insurance pricing?

- Can the policy discussion avoid the inappropriate use of the term "subsidy" without consideration of the capital costs that the "mandatory offer" requirement imposes on the insurance industry?

- What existing laws or regulations encourage or discourage provision of terrorism coverage, and what changes might improve matters?

- What about domestic terrorists?

Thank you for your time. I would be glad to respond to any questions now, or, if you wish, I can make myself and the Academy Subgroup available later for further discussion on this matter.